Office Action Summary	Application No.	Applicant(s)	
	09/936,440	MAHLAB, URI	
	Examiner	Art Unit	
	Agustin Bello	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *45-55,57,59,66-73,82-84 and 86* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *45-55,57,59,66-73,82-84 and 86* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. *1/23/09* .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Interview

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/30/08 has been entered.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 45-47, 53. 55, 57, 66, 72, 82-83, 86 are rejected under 35 U.S.C. 102(b) as being anticipated by Barnsley (U.S. Patent No. 5,488,501).

Regarding claim 45, Barnsley teaches in a telecommunication system, a method for routing optical data signals using a first communication path (the optical path between reference numerals 4 and 6 in Figure 1) comprising at least one optical fiber (i.e. the fiber link between elements 4 and 6 in Figure 1) extending between at least two network elements (reference numerals 4, 6 in Figure 1) of the telecommunication system for carrying optical data signals

separated from optical addressing signals, and a second communication path (e.g. the communication path between the output of coupler 7 and the input of optical switch 8 in Figure 1) comprising one or more optical fibers (i.e. the fiber between reference numerals 14 and 8 in Figure 1) extending between at least two network elements of the telecommunication system (reference numerals 14, 8 in Figure 1) for carrying optical addressing signals separated from said optical data signals, each of said at least two network elements having routing capabilities (i.e. element 4 routes the optical data signals onto the fiber between elements 4 and 6, while element 6 routes the combined optical data signals and control signal onto fiber 2), the method comprising the steps of providing a combination of said optical addressing signals to provide addressing information required for establishing an address for routing the optical data signals (column 1 lines 23-31), and providing at least one of said at least one optical fiber (i.e. the fiber link between elements 4 and 6 in Figure 1) comprised in said first communication path for carrying said optical data signals separated from said optical addressing signals is different path from any of the one or more optical fibers comprised in said second communication path (i.e. the fiber between reference numerals 14 and 8 in Figure 1), and wherein said optical data signals being conveyed separately from said optical addressing signals along said at least one optical fiber were generated at a plurality of different network elements (i.e. the data signals generated at element 4 in Figure 1 where generated by a plurality of different elements, namely a light source and a modulator, each of which are part of the network and are thereby considered network elements; see column 2 lines 5-9), each of said plurality of different network elements having routing capabilities (i.e. the light source routes light towards the modulator and ultimately the

fiber between elements 4 and 6, while the modulator within element 4 routes electrical data pulse input from an external data source to be modulated onto the light from the light source).

Regarding claim 46, Barnsley teaches in a telecommunication system, a method for routing optical data signals between at least two routers in the system, which method comprises: generating first optical addressing signals by converting signals identifying a destination address into corresponding optical addressing signals (reference numeral 5a in Figure 1); transmitting said optical addressing signals separated from said optical data signals over one or more optical fibers (i.e. the fiber from element 5 and router 6) comprised in a first communication path (i.e. the communication path formed between elements 5, 6, and 7), said first communication path extending from one (reference numeral 6 in Figure 1) of the at least two routers to another router (reference numeral 7 in Figure 1) of the at least two routers, each of said at least two network elements having routing capabilities (i.e. element 6 routes the optical data signals and control signal onto the fiber 2, while element 7 routes the combined optical data signals and control signal from fiber 2 onto one of two output fibers); and concurrently or subsequently transmitting said optical data signals (reference numeral 4 in Figure 1) separated from said optical addressing signals to said another router via a second communication path (i.e. the communication path formed between elements 4, 6, and 7) comprising at least one optical fiber (i.e. the fiber between elements 4 and 6 in Figure 1), said second communication path extending from said one router (reference numeral 6 in Figure 1) of the at least two routers to the another router (reference numeral 7 in Figure 1), and comprising at least one optical fiber (i.e. the fiber between elements 4 and 6 in Figure 1) which is different from any of the at least one optical fibers (i.e. the fiber from element 5 and router 6) comprised in said first communication path, wherein said optical

data signals being conveyed separately from said optical addressing signals were generated at a plurality of different network elements (i.e. the data signals generated at element 4 in Figure 1 where generated by a plurality of different elements, namely a light source and a modulator, each of which are part of the network and are thereby considered network elements; see column 2 lines 5-9), each of said plurality of different network elements having routing capabilities (i.e. the light source routes light towards the modulator and ultimately the fiber between elements 4 and 6, while the modulator within element 4 routes electrical data pulse input from an external data source to be modulated onto the light from the light source).

Regarding claim 47, Barnsley teaches generating new optical addressing signals (reference numeral 5a in Figure 1) associated with the next section of a transmission path extending from said one router (reference numeral 6 in Figure 1) of the at least two routers towards said destination address; transmitting the new optical addressing signals over one or more optical fibers (i.e. the link comprising reference numerals 2, 5, 6, 7 in Figure 1) extending between said one router of the at least two routers and another router (reference numeral 7 in Figure 1); transmitting said optical data signals to said another router via an optical fiber (i.e. the link comprising reference numerals 2, 4, 6, 7 in Figure 1) extending between said one router of the at least two routers and said another router; wherein said optical fiber over which said optical data signals are transmitted is different form said one or more optical fibers for carrying said opt data signals separated from said optical addressing signals, repeating the steps of generating new optical signals (inherent in the transmission of each 16-bit packet and its associated control signal as described in column 3 lines 55 – column 4 line 7), transmitting the new optical addressing signals separated from said optical data signals and transmitting said optical data

signals separated from said new optical addressing signals to said another router (i.e. the addressing signals and the data signals are separated at least before they reach router 6 in Figure 1), until said optical data signals are transmitted to said destination address via subsequent routers (reference numeral 8 in Figure 1) located along a transmission path extending towards said destination address.

Regarding claims 53 and 72, Barnsley teaches that the transmission of at least one of the optical data signals is delayed (as noted in the abstract) until the following steps are performed (column 4 lines 28-34): decoding said optical address signals (column 1 lines 25-27); deriving addressing information from the decoded optical addressing signals (column 1 lines 25-27); and if required, generating another, or using said, optical routing address for further routing of said optical data signals (column 4 lines 24-29).

Regarding claim 55, Barnsley teaches transmitting to said one of the at least two routers (reference numeral 8 in Figure 1) an indication (i.e. the control signal 5a) that said optical data signals can be forwarded towards their destination; receiving (reference numeral 16 in Figure 1) said indication at said one of the at least two routers; and transmitting, responsive to receiving said indication, said optical data signals towards said another router along said data transmission path (i.e. along to path 11a).

Regarding claim 57, Barnsley teaches that at least one part of said second communication path extends in network different than a network in which said optical data signals are transmitted to their destination (i.e. the next network connected to reference numeral 3 in Figure 1; Figures 5 and 6).

Regarding claim 66, Barnsley teaches a routing apparatus (reference numerals 4, 5, 6, 2 in Figure 1) for routing optical data signals said apparatus comprises means (reference numeral 5 in Figure 1) for generating first optical addressing signals by converting signals identifying a destination address into corresponding optical addressing signals; means (reference numeral 5 in Figure 1) for transmitting said optical addressing signals from said routing apparatus to a second router (reference numeral 7 in Figure 1) over a first communication path (i.e. the path comprised of reference numerals 5, 6, 2, and 7 in Figure 1) comprising at least one optical fiber (i.e. the fiber between reference numeral 5 and 6 in Figure 1) for carrying said optical addressing signals separated from said optical data signals; each of said routing apparatus and said second router having routing capabilities (i.e. elements 6 and 7 route signals to and from the fibers of the system) and means (reference numeral 4 in Figure 1) for transmitting said optical data signals from said routing apparatus to said second router (reference numeral 7 in Figure 1) along a second communication path (i.e. the path comprised of reference numerals 4, 6, 2, and 7 in Figure 1) comprising at least one optical fiber (i.e. the fiber between reference numeral 4 and 6 in Figure 1), said at least one optical fiber for carrying said optical data signals separated from said optical addressing signals and wherein said at least one optical fiber for carrying said optical data signals separated from said optical addressing signals is different from any of the at least one optical fibers comprised in said first communication path (i.e. the fiber between reference numeral 4 and 6 in Figure 1 is different from the fiber between reference numeral 5 and 6 in Figure 1), and wherein said optical data signals being conveyed separately from said optical addressing signals, were generated at a plurality of different network elements (i.e. the data signals generated at element 4 in Figure 1 where generated by a plurality of different elements,

namely a light source and a modulator, each of which are part of the network and are thereby considered network elements; see column 2 lines 5-9), each of said plurality of different network elements having routing capabilities (i.e. the light source routes light towards the modulator and ultimately the fiber between elements 4 and 6, while the modulator within element 4 routes electrical data pulse input from an external data source to be modulated onto the light from the light source).

Regarding claim 82, Barnsley teaches an apparatus for transmitting optical data signals between at least two network elements (reference numeral 4 and 12 in Figure 1) in a system a) signal generating means (reference numeral 5 in Figure 1) for generating optical addressing signals by converting signals identifying a destination address into corresponding optical addressing signals; b) transmission means (reference numeral 5 in Figure 1) for transmitting said optical addressing signals separated from said optical data signals over a first communication path (i.e. the path comprised of reference numerals 5, 6, 2, and 7 in Figure 1) comprising one or more optical addressing fibers (i.e. the fiber between reference numeral 5 and 6 in Figure 1) and extending between the at least two network elements towards said destination address, each of said at least two network elements having routing capabilities (i.e. elements 4 routes optical data signals onto the fiber between elements 4 and 6, element 12 routes optical data signal onto the fiber between elements 12 and 13) ; and c) transmission means (reference numeral 8 in Figure 1) for transmitting said optical data signals towards said destination address (reference numeral 12 in Figure 1) along a second communication path (i.e. the path comprised of reference numerals 4, 6, 2, 7, 8, 13, and 12 in Figure 1) comprising at least one optical fiber extending between the at least two network elements for conveying said optical data signals separated from said optical

addressing signals fiber (i.e. the fiber between reference numeral 4 and 6 in Figure 1), wherein at least one of said at least one optical fiber in said second communication path is different than any of the at least one optical fibers comprised in the second communication path (i.e. the fiber between reference numeral 4 and 6 in Figure 1 is different from the fiber between reference numeral 5 and 6 in Figure 1), and wherein said optical data signals being conveyed separately from said optical addressing signals, were generated at a plurality of different network elements (i.e. the fiber between reference numeral 4 and 6 in Figure 1 is different from the fiber between reference numeral 5 and 6 in Figure 1), and wherein said optical data signals being conveyed separately from said optical addressing signals, were generated at a plurality of different network elements (i.e. the data signals generated at element 4 in Figure 1 where generated by a plurality of different elements, namely a light source and a modulator, each of which are part of the network and are thereby considered network elements; see column 2 lines 5-9), each of said plurality of different network elements having routing capabilities (i.e. the light source routes light towards the modulator and ultimately the fiber between elements 4 and 6, while the modulator within element 4 routes electrical data pulse input from an external data source to be modulated onto the light from the light source).

Regarding claim 83, Barnsley teaches the apparatus according to Claim 82, further comprising means (reference numeral 8 in Figure 1) for receiving an indication that said optical data signals can be forwarded towards their destination (reference numeral 12 in Figure 1), wherein said means for transmitting said optical data signals (reference numeral 8 in Figure 1) is adapted to transmit the optical data signals towards said destination responsive to receiving said indication (column 4 lines 24-29).

Regarding claim 86, Barnsley teaches a telecommunications routing apparatus (reference numeral 1 in Figure 1) comprising a) receiving means for receiving first optical addressing signals (reference numeral 8 in Figure 1) ; b) signal generation means for generating second optical addressing signals (reference numeral 21 in Figure 1) associated with the next section of a transmission path (reference numeral 3 in Figure 1) extending towards a destination address; c) transmission means (reference numeral 21 in Figure 1) for transmitting the second optical addressing signals separated (i.e. the separation of addressing and data signals clearly indicated by a branch between elements 20 and 21 in Figure 1) from optical data signals (reference numeral 20 in Figure 1) over one or more optical fibers (i.e. the fibers at the input and input of element 8 in Figure 1, the fibers connecting element 21 to element 8, the separation of addressing and data signals clearly indicated by a branch between elements 20 and 21, reference numeral 3 in Figure 1) extending from said telecommunication routing apparatus towards the destination address representing a second network element, said telecommunications routing apparatus and said second network element each having routing capabilities (i.e. element 1 in Figure 1 has a plurality of routing capabilities, and a second network element downstream also has routing capabilities in that it routes a received signal to its destination); d) receiving means (reference numeral 8 in Figure 1) for receiving optical data signals generated at a plurality of different network elements each of said plurality of different routing elements having routing capabilities (i.e. the light source of element 4 routes light towards the modulator and ultimately the fiber between elements 4 and 6, while the modulator within element 4 routes electrical data pulse input from an external data source to be modulated onto the light from the light source).; and e) transmission means (reference numeral 8 in Figure 1) for transmitting the optical data signals

received towards the destination address along an optical path (reference numeral 20, 9b, 8, 11a, 3 in Figure 1) extending from the telecommunication routing apparatus toward the second network element which comprises at least one optical fiber that is different from any one or more optical fibers over which the second optical addressing signals separated from the optical data signals are transmitted (i.e. the separation of addressing and data signals clearly indicated by a branch between elements 20 and 21 in Figure 1).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 48-52, 54, 59, 67-71, 73, and 84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barnsley in view of Nir (U.S. Patent No. 6,160,652).

Regarding claim 48 and 67, Barnsley differs from the claimed invention in that it fails to specifically teach that information extracted from at least one of the optic addressing signals is transmitted at one of two binary illumination states. However, the transmission of binary information is very well known in the art. Furthermore, Nir, in the same field of optical communication, teaches the transmission of optical address signals in different binary illumination states (column 6 lines 23-65). One skilled in the art would have been motivated to employ a binary illumination scheme such as that taught by Nir in order to increase the number of available addresses. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to transmit optical address signals in different binary illumination states.

Regarding claim 49, Barnsley differs from the claimed invention in that it fails to specifically teach that at least one of the optical addressing signals is transmitted at a certain illumination level whereas at least one other optical addressing signal is presented by absence of illumination. However, as discussed regarding claim 48, Nir teaches the transmission of optical address signals in different binary illumination states and further teaches that the optical addressing signals is transmitted at a certain illumination level (e.g. "1" being high) whereas at least one other optical addressing signal is presented by absence of illumination (e.g. "0" being low) (column 6 lines 23-65). One skilled in the art would have been motivated to employ a binary illumination scheme such as that taught by Nir in order to increase the number of available addresses. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to transmit optical address signals in different binary illumination states.

Regarding claims 50-52 and 68-71, the combination of references obviates the ability to transmit the optical addressing signals either on the same wavelength, different wavelength, at the same intensity or different intensities (see addressing tables of Nir indicating different intensities and different wavelengths). Furthermore, the applicant's claim to a variety of combinations of wavelengths and intensities indicates that this feature is not critical to the invention at hand. Clearly, one skilled in the art would possess the ability to transmit optical signals at different intensities and wavelengths as desired. As such the combination of references obviates the claimed invention.

Regarding claims 54 and 73, Barnsley differs from the claimed invention in that it fails to specifically teach that the transmission of said at least one of the optical data signals is delayed by allowing said at least one of the optical data signals to pass through an optic fiber of a length

corresponding to a desired delay in the transmission. However, Nir teaches this limitation (column 2 line 9 –14). One skilled in the art would have been motivated to employ a delay as taught by Nir in order to prevent loss of data bits (column 5 lines 14-17 of Barnsley). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to delay the transmission of a data signal via a delay fiber.

Regarding claims 59 and 84, Barnsley differs from the claimed invention in that Barnsley fails to specifically teach that at least one part of said first path extends in a network which uses at least one of the following protocols: MPLS, MPλS, IP, ATM and SS7. However, Nir teaches the IP protocol (column 1 lines 28-35). Furthermore, the protocols listed by the applicant are very well known in the art and well within the realm of knowledge of one skilled in the art. As such, one skilled in the art could have selected which protocol or combination of protocols would be most effective in the system of Barnsley. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to employ different protocols as taught by Nir in the system of Barnsley.

Response to Arguments

7. Applicant's arguments filed 06/30/08 have been fully considered but they are not persuasive. As noted in the amended office action, the examiner maintains that Barnsley teaches each of the newly added limitations. Furthermore, as noted throughout the prosecution of the case and numerous interviews, the examiner maintains that the optical data signals and the optical addressing signals are carried along separate paths between elements 4, 5, and 6. As to applicant's argument regarding the meaning of the terms "network element," the examiner

maintains that elements 4, 5-8, and 14-15 are network elements are elements within the network and can therefore be broadly considered as network elements.

Conclusion

8. This is a continuation of applicant's earlier Application No. 09/936,440. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

/Agustin Bello/

Primary Examiner, Art Unit 2613